

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) An image processing device comprising:
a character recognition unit that recognizes character codes from character images in image data;
a conversion unit for converting character images to character code data according to character codes; and
a judgment unit that obtains a degree of character continuity, which is a degree of continuity between a character image and neighboring character images thereof, for any character image for which a character code has been recognized by said character recognition unit, and that makes a judgment on whether, based on the degree of character continuity, said character image should be ~~converted into~~ represented by character code data based on said degree of character continuity or should be represented by image data.

2. (Currently Amended) An image processing device as claimed in claim 1, wherein

said judgment unit obtains said degree of character continuity based on at least one of:

a distance between said character image for which a character code has been recognized and neighboring character images ~~thereof~~, thereof;

a difference in font size between said character image for which a character code has been recognized and neighboring character images ~~thereof~~, thereof;

a difference in font type between said character image for which a character code has been recognized and neighboring character images ~~thereof~~, thereof;

a length of a character string in which said character image for which a character code has been recognized ~~exists, or exists;~~ and

a difference in color between said character image for which a character code has been recognized and neighboring character images thereof.

3. (Original) An image processing device as claimed in claim 1, wherein said judgment unit makes a judgment to convert said character image into character code data when said degree of character continuity is larger than a first prescribed value.

4. (Currently Amended) An image processing device as claimed in claim 1, wherein

said character recognition unit detects a degree of character recognition certainty, which is a degree of certainty in recognizing a character code from a character image; and

said judgment unit makes [a] the judgment on whether said character image should be converted into character code data further based on ~~said degree of character continuity and~~ said degree of character recognition certainty.

5. (Original) An image processing device as claimed in claim 4, wherein said judgment unit makes a judgment that said character image should be converted to character code data when said degree of character continuity is larger

than a first prescribed value and said degree of character recognition certainty is larger than a second prescribed value.

6. (Original) An image processing device as claimed in claim 5, further comprising:

a character image data generating unit that cuts out character images from said image data to generate character image data, wherein

said judgment unit makes a judgment that said character image data generating unit should generate said character image data for any character image whose degree of character continuity is larger than a third prescribed value, which is smaller than said first prescribed value, among character images judged not to be converted into character code data.

7. (Original) An image processing device as claimed in claim 5, wherein

said judgment unit makes a judgment that any character image whose degree of character continuity is smaller than a third prescribed value, which is smaller than said first prescribed value, should be left intact in said image data, among character images judged not to be converted into character code data.

8. (Original) An image processing device as claimed in claim 1, further comprising:

a file generating unit that generates an electronic file containing character code data converted by said conversion unit.

9. (Currently Amended) A program product on a computer readable medium for image processing, said program product causing a computer to execute a process comprising the steps of:

1) recognizing character codes from character images in image data;
2) obtaining a degree of character continuity between a character image and neighboring character images thereof for any character image for which a character code has been recognized ~~[at]~~ in said step 1); and

3) making a judgment on whether, based on the degree of character continuity, said character image should be ~~converted into~~ represented by character code data ~~based on said degree of character continuity~~ or should be represented by image data.

10. (Currently Amended) A program product as claimed in claim 9, wherein said degree of character continuity is obtained ~~[at]~~ in said step 2) based on at least one of:

a distance between said character image for which a character code has been recognized and neighboring character images ~~thereof~~, thereof;

a difference in font size between said character image for which a character code has been recognized and neighboring character images ~~thereof~~, thereof;

a difference in font type between said character image for which a character code has been recognized and neighboring character images ~~thereof~~, thereof;

a length of a character string in which said character image for which a character code has been recognized ~~exists, or~~ exists; and

a difference in color between said character image for which a character code has been recognized and neighboring character images thereof.

11. (Currently Amended) A program product as claimed in claim 9, wherein a judgment is made [at] in said step 3) that said character image should be converted into character code data when said degree of character continuity is larger than a first prescribed value.

12. (Currently Amended) A program product as claimed in claim 9, wherein a degree of character recognition certainty is further detected [at] in said step 1), which is a degree of certainty in recognizing a character code from a character image; and

a judgment is made at said step 3) on whether said character image should be converted into character code data based on said degree of character continuity and said degree of character recognition certainty.

13. (Currently Amended) A program product as claimed in claim 12, wherein a judgment is made [at] in said step 3) that said character image should be converted into character code data when said degree of character continuity is larger than a first prescribed value and said degree of character recognition certainty is larger than a second prescribed value.

14. (Currently Amended) A program product as claimed in claim 13, wherein said process further comprising the step of:

4) cutting out character images from said image data to generate character image data, and

a judgment is made [at] in said step 3) that character image data should be generated for any character image whose degree of character continuity is larger

than a third prescribed value, which is smaller than said first prescribed value, among character images judged not to be converted into character code data.

15. (Currently Amended) A program product as claimed in claim 13, wherein a judgment is made [at] in said step 3) that any character image whose degree of character continuity is smaller than a third prescribed value, which is smaller than said first prescribed value, should be left intact in said image data, among character images judged not to be converted into character code data.

16. (Original) A program product as claimed in claim 9, wherein said process further comprising the step of:

5) generating an electronic file containing character code data converted from said character images.

17. (Currently Amended) An image processing system, comprising:
a scanning device for scanning documents to obtain image data; and
an image processing device comprising:
a character recognition unit that recognizes character codes from character images in image data;

a conversion unit for converting character images to character code data according to character codes; and

a judgment unit that obtains a degree of character continuity, which is a degree of continuity between a character image and neighboring character images thereof, for any character image for which a character code has been recognized by said character recognition unit, and that makes a judgment on whether, based on the degree of character continuity, said character image should be ~~converted into~~

represented by character code data based on said degree of character continuity or should be represented by image data.

18. (Original) An image processing system as claimed in claim 17, wherein said image processing device further comprises a file generating unit that generates an electronic file containing character code data converted by said conversion unit; and

said image processing system further comprises a printer that prints images based on said electronic file.

19. (New) An image processing device as claimed in claim 1, wherein the image data representing said character image is any one of input image data and character image data.

20. (New) A program product as claimed in claim 9, wherein the image data representing said character image is any one of input image data and character image data.

21. (New) An image processing system as claimed in claim 17, wherein the image data representing said character image is any one of input image data and character image data.

22. (New) An image processing method comprising the steps of:

1) generating character code data of a character image from original image data;

2) generating character image data of the character image from the original image data; and

3) employing at least one of the original image data, the character image data, and the character code data to represent the character image.

23. (New) An image processing method as claimed in claim 22, wherein, in the step 3), one of the original image data, the character image data, and the character code data is selected to represent the character image.